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STRUCTURE FILE UPDATES: 25 APR 2007 HIGHEST RN 932710-95-7  
DICTIONARY FILE UPDATES: 25 APR 2007 HIGHEST RN 932710-95-7

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(FILE 'HOME' ENTERED AT 10:22:24 ON 26 APR 2007)

FILE 'HCAPLUS' ENTERED AT 10:22:34 ON 26 APR 2007  
L1 1 SEA ABB=ON PLU=ON US2005164089/PN

FILE 'REGISTRY' ENTERED AT 10:23:10 ON 26 APR 2007  
L2 10 SEA ABB=ON PLU=ON (1304-28-5/BI OR 1310-58-3/BI OR  
1313-13-9/BI OR 1332-29-2/BI OR 17194-00-2/BI OR  
513-77-9/BI OR 7440-39-3/BI OR 7440-66-6/BI OR 7727-43-7/  
BI OR 7782-42-5/BI)  
D SCA

L3 1 SEA ABB=ON PLU=ON 7727-43-7/RN  
L4 1 SEA ABB=ON PLU=ON 17194-00-2/RN  
L5 1 SEA ABB=ON PLU=ON 513-77-9/RN  
L6 1 SEA ABB=ON PLU=ON 1304-28-5/RN  
L7 1 SEA ABB=ON PLU=ON 7440-39-3/RN  
L8 1 SEA ABB=ON PLU=ON 1313-13-9/RN  
L9 1 SEA ABB=ON PLU=ON CARBON/CN  
L10 1 SEA ABB=ON PLU=ON GRAPHITE/CN  
L11 1 SEA ABB=ON PLU=ON 1332-29-2/RN  
L12 1 SEA ABB=ON PLU=ON ZINC/CN  
L13 1 SEA ABB=ON PLU=ON "POTASSIUM HYDROXIDE"/CN  
L14 1 SEA ABB=ON PLU=ON "LITHIUM HYDROXIDE"/CN  
L15 1 SEA ABB=ON PLU=ON "SODIUM HYDROXIDE"/CN  
L16 1 SEA ABB=ON PLU=ON "CALCIUM HYDROXIDE"/CN  
L17 1 SEA ABB=ON PLU=ON "MAGNESIUM HYDROXIDE"/CN  
L18 1 SEA ABB=ON PLU=ON "AMMONIUM HYDROXIDE"/CN

FILE 'HCAPLUS' ENTERED AT 10:57:10 ON 26 APR 2007  
L19 QUE ABB=ON PLU=ON POSITIVE?(A)ELECTROD## OR CATHOD##

L20 91 SEA ABB=ON PLU=ON (L3 OR (BARIUM OR BA) (A) (SULFATE OR  
     SULPHATE) ) (L) L19  
 L21 86 SEA ABB=ON PLU=ON (L4 OR (BARIUM OR BA) (A) HYDROXIDE) (L)  
     L19  
 L22 217 SEA ABB=ON PLU=ON (L5 OR (BARIUM OR BA) (A) CARBONATE) (L)  
     L19  
 L23 1440 SEA ABB=ON PLU=ON (L6 OR (BARIUM OR BA) (A) OXIDE OR  
     BAO) (L) L19  
 L24 865 SEA ABB=ON PLU=ON L7/D (L) SALT  
 L25 28739 SEA ABB=ON PLU=ON (L7/D OR BARIUM OR BA) (L) SALT  
 L26 353 SEA ABB=ON PLU=ON L25 (L) L19  
 L27 2441 SEA ABB=ON PLU=ON L3 (L) MOA/RL  
 L28 233 SEA ABB=ON PLU=ON L4 (L) MOA/RL  
 L29 449 SEA ABB=ON PLU=ON L5 (L) MOA/RL  
 L30 1497 SEA ABB=ON PLU=ON L6 (L) MOA/RL  
 L31 19 SEA ABB=ON PLU=ON L20 AND L27  
 L32 22 SEA ABB=ON PLU=ON L21 AND L28  
 L33 18 SEA ABB=ON PLU=ON L22 AND L29  
 L34 49 SEA ABB=ON PLU=ON L23 AND L30  
 L35 QUE ABB=ON PLU=ON MODIF? OR ADDITIVE? OR ADJUVANT? OR  
     AUXILIAR?  
 L36 83013 SEA ABB=ON PLU=ON L8 OR MNO2 OR (MANGANESE OR MN) (A) (OX  
     IDE OR DIOXIDE)  
 L37 147 SEA ABB=ON PLU=ON ((L20 OR L21 OR L22 OR L23) OR L26)  
     AND L35  
 L38 17 SEA ABB=ON PLU=ON (L37 OR (L31 OR L32 OR L33 OR L34))  
     AND L36  
 L39 436879 SEA ABB=ON PLU=ON (L9 OR L10 OR L11)  
 L40 QUE ABB=ON PLU=ON CARBON OR GRAPHITE OR (TIN OR  
     SN) (A) OXIDE  
 L41 QUE ABB=ON PLU=ON METAL? (2A) OXIDE  
 L42 QUE ABB=ON PLU=ON CONDUCT? (2A) (MATERIAL? OR SUBSTANCE?)  
 L43 5 SEA ABB=ON PLU=ON L38 AND (L39 OR L40 OR L41 OR L42)  
 L44 QUE ABB=ON PLU=ON (POTASSIUM OR K OR LITHIUM OR LI OR  
     SODIUM OR NA OR CALCIUM OR CA OR MAGNESIUM OR MG OR  
     AMMONIUM OR NH4) (A) HYDROXIDE  
 L45 QUE ABB=ON PLU=ON KOH OR LIOH OR NAOH OR CAOH OR MGOH  
     OR NH4OH  
 L46 165898 SEA ABB=ON PLU=ON (L13 OR L14 OR L15 OR L16 OR L17 OR  
     L18)  
 L47 2 SEA ABB=ON PLU=ON L43 AND (L44 OR L45 OR L46)  
 L48 QUE ABB=ON PLU=ON BATTERY OR (ELECTROCHEM? OR ELECTROLY  
     ? OR GALVAN? OR WET OR DRY OR PRIMARY OR SECONDARY) (2A) (C  
     ELL OR CELLS)  
 L49 15721 SEA ABB=ON PLU=ON (L12 OR ZINC OR ZN) (L) L48  
 L50 2 SEA ABB=ON PLU=ON L47 AND L49  
 L51 1 SEA ABB=ON PLU=ON (L38 OR L43 OR L47 OR L50) AND (TIN  
     OR SN) (A) OXIDE  
 L52 1 SEA ABB=ON PLU=ON (L47 OR L50) NOT L51  
 L53 3 SEA ABB=ON PLU=ON L43 NOT (L51 OR L52)  
 L54 12 SEA ABB=ON PLU=ON L38 NOT (L51 OR L52 OR L53)

=> fil hcap  
 FILE 'HCAPLUS' ENTERED AT 11:31:19 ON 26 APR 2007  
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FILE COVERS 1907 - 26 Apr 2007 VOL 146 ISS 18  
FILE LAST UPDATED: 25 Apr 2007 (20070425/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d 151 ibib abs hitstr hitind

L51 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2005:672712 HCAPLUS Full-text  
DOCUMENT NUMBER: 143:156366  
TITLE: Cathode material for battery  
INVENTOR(S): Iltchev, Nikolay K.; Mao, Ou; Eylem, Cahit;  
Cintra, George; Pinnell, Leslie J.  
PATENT ASSIGNEE(S): USA  
SOURCE: U.S. Pat. Appl. Publ., 10 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005164089	A1	20050728	US 2004-765569	200401 28
WO 2005074059	A1	20050811	WO 2005-US2512	200501 26
WO 2005074059	A8	20051006		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
EP 1709703	A1	20061011	EP 2005-712111	200501 26
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,			

PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS  
 CN 1914752 A 20070214 CN 2005-80003474

PRIORITY APPLN. INFO.:	US 2004-765569	A1	200501
			26
			200401
			28
	WO 2005-US2512	W	200501
			26

AB The **cathode** of an alkaline battery can include an elec. conductive **additive** to increase the **cathode** efficiency. The **additive** can include a **barium salt** and an elec. conductive material. The elec. conductive material can be coated on a surface of the **barium salt**. The elec. conductive material can be an elec. conductive metal oxide.

IT 1310-58-3, **Potassium hydroxide**, uses  
 1313-13-9, **Manganese dioxide**, uses  
 7440-66-6, **Zinc**, uses  
 RL: DEV (Device component use); USES (Uses)  
 (cathode material for **battery**)

RN 1310-58-3 HCAPLUS  
 CN Potassium hydroxide (K(OH)) (CA INDEX NAME)

K-OH

RN 1313-13-9 HCAPLUS  
 CN Manganese oxide (MnO<sub>2</sub>) (CA INDEX NAME)

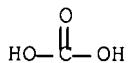
O—Mn—O

RN 7440-66-6 HCAPLUS  
 CN Zinc (CA INDEX NAME)

Zn

IT 513-77-9, **Barium carbonate**  
 1304-28-5, **Barium oxide**, uses  
 1332-29-2, **Tin oxide** 7440-39-3D  
 , **Barium**, salt 7727-43-7,  
**Barium sulfate** 7782-42-5,  
**Graphite**, uses 17194-00-2, **Barium hydroxide**  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (cathode material for battery)

RN 513-77-9 HCAPLUS  
 CN Carbonic acid, barium salt (1:1) (CA INDEX NAME)



● Ba

RN 1304-28-5 HCAPLUS  
 CN Barium oxide (BaO) (CA INDEX NAME)

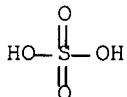


RN 1332-29-2 HCAPLUS  
 CN Tin oxide (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
 RN 7440-39-3 HCAPLUS  
 CN Barium (CA INDEX NAME)

Ba

RN 7727-43-7 HCAPLUS  
 CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)

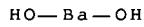


● Ba

RN 7782-42-5 HCAPLUS  
 CN Graphite (CA INDEX NAME)

C

RN 17194-00-2 HCAPLUS  
 CN Barium hydroxide (Ba(OH)<sub>2</sub>) (9CI) (CA INDEX NAME)



IC ICM H01M004-62  
 ICS H01M004-50; H01M004-42

INCL 429232000; 429224000; 429229000; 029623100  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 IT Coating materials  
 (elec. conductive; cathode material for battery)  
 IT 1310-58-3, Potassium hydroxide, uses  
 1313-13-9, Manganese dioxide, uses  
 7440-66-6, Zinc, uses  
 RL: DEV (Device component use); USES (Uses)  
 (cathode material for battery)  
 IT 513-77-9, Barium carbonate  
 1304-28-5, Barium oxide, uses  
 1332-29-2, Tin oxide 7440-39-3D  
 , Barium, salt 7727-43-7,  
 Barium sulfate 7782-42-5,  
 Graphite, uses 17194-00-2, Barium  
 hydroxide  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (cathode material for battery)

=> d 152 ibib abs hitstr hitind

L52 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:556567 HCAPLUS Full-text  
 DOCUMENT NUMBER: 145:30921  
 TITLE: Cathodes for zinc manganese  
 dioxide batteries having  
 barium additives  
 INVENTOR(S): Taucher, Waltraud; Kordesch, Karl; Daniel-Ivad,  
 Josef  
 PATENT ASSIGNEE(S): Austria  
 SOURCE: Can. Pat. Appl., 22 pp.  
 CODEN: CPXXEB  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2126069	A1	19930624	CA 1992-2126069	199212 21
CA 2126069	C	20060606		
WO 9312551	A1	19930624	WO 1992-CA553	199212 21
W: AU, BB, BG, BR, CA, CS, FI, JP, KP, KR, LK, MG, MN, MW, NO, PL, RO, RU, SD				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, SN, TD, TG				
PRIORITY APPLN. INFO.:		HU 1991-4047	A	199112 19
		WO 1992-CA553	W	199212 21

AB A cathode structure for alkaline manganese dioxide-zinc primary or rechargeable cells with improved capacity that comprise manganese dioxide active material, a conductive powder and an additive material uniformly mixed and pressed to form a porous body, wherein the additive is a barium compound which is at least 3% mass of the solid components. The preferred additive is barium oxide, barium hydroxide or barium sulfate. The invention relates also to alkaline manganese dioxide-zinc primary or rechargeable cells, wherein the cathode structure is employed.

IT 1310-58-3, Potassium hydroxide, uses  
 1313-13-9, Manganese dioxide, uses  
 7440-66-6, Zinc, uses  
 RL: DEV (Device component use); USES (Uses)  
 (cathodes for zinc manganese dioxide batteries having barium additives)

RN 1310-58-3 HCPLUS  
 CN Potassium hydroxide (K(OH)) (CA INDEX NAME)

K-OH

RN 1313-13-9 HCPLUS  
 CN Manganese oxide (MnO<sub>2</sub>) (CA INDEX NAME)

O=Mn=O

RN 7440-66-6 HCPLUS  
 CN Zinc (CA INDEX NAME)

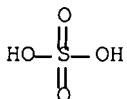
Zn

IT 1304-28-5, Barium oxide, uses  
 7727-43-7, Barium sulfate  
 17194-00-2, Barium hydroxide  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (cathodes for zinc manganese dioxide batteries having barium additives)

RN 1304-28-5 HCPLUS  
 CN Barium oxide (BaO) (CA INDEX NAME)

Ba=O

RN 7727-43-7 HCPLUS  
 CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)



● Ba

RN 17194-00-2 HCAPLUS  
 CN Barium hydroxide (Ba(OH)2) (9CI) (CA INDEX NAME)

HO—Ba—OH

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST cathode zinc manganese dioxide  
     battery barium additive  
 IT Battery cathodes  
     Primary batteries  
     Secondary batteries  
         (cathodes for zinc manganese dioxide  
             batteries having barium additives)  
 IT 1310-58-3, Potassium hydroxide, uses  
     1313-13-9, Manganese dioxide, uses  
     7440-66-6, Zinc, uses  
     RL: DEV (Device component use); USES (Uses)  
         (cathodes for zinc manganese dioxide  
             batteries having barium additives)  
 IT 1304-28-5, Barium oxide, uses  
     7440-39-3D, Barium, compound 7727-43-7, Barium  
     sulfate 17194-00-2, Barium  
     hydroxide  
     RL: MOA (Modifier or additive use); USES (Uses)  
         (cathodes for zinc manganese  
             dioxide batteries having barium  
             additives)

=> d 153 ibib abs hitstr hitind 1-3

L53 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2003:856175 HCAPLUS Full-text  
 DOCUMENT NUMBER: 139:352680  
 TITLE: Positive electrode for nonaqueous electrolyte  
       battery, process for producing the same and  
       nonaqueous electrolyte battery  
 INVENTOR(S): Otsuki, Masashi; Eguchi, Shinichi; Kanno,  
       Hiroshi  
 PATENT ASSIGNEE(S): Bridgestone Corporation, Japan  
 SOURCE: PCT Int. Appl., 74 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----
WO 2003090295	A1	20031030	WO 2003-JP4038	200303 28
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2003236308	A1	20031103	AU 2003-236308	200303 28
EP 1498965	A1	20050119	EP 2003-746887	200303 28
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK	US 2005153207	A1	20050714	US 2003-511034
CN 1647299	A	20050727	CN 2003-808623	200303 28
PRIORITY APPLN. INFO.:			JP 2002-116990	A 200204 19
			JP 2002-117151	A 200204 19
			WO 2003-JP4038	W 200303 28

AB A pos. electrode for nonaq. electrolyte battery, comprising particles of a pos. electrode active substance and, dispersed therebetween, at least one alkaline earth metal oxide selected from the group consisting of magnesium oxide, calcium oxide and barium oxide. The electrode fabrication process includes steps of dispersing MnO<sub>2</sub> particles in an aqueous solution of alkaline earth metal hydroxide, drying the dispersion, heating at 290-310° to convert the hydroxide to oxide, pulverizing the mixture and compacting the powder. Primary batteries having the said electrodes are also disclosed. The nonaq. electrolyte for the primary batteries preferably contains a phosphazene derivative. This pos. electrode enables enhancing the discharge capacity or charge-discharge capacity of nonaq. electrolyte battery immediately after production thereof and after storage at high temperature

IT 1313-13-9, Manganese dioxide, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(alkaline earth oxide additives for nonaq. electrolyte

primary battery cathode active substance)  
 RN 1313-13-9 HCAPLUS  
 CN Manganese oxide (MnO<sub>2</sub>) (CA INDEX NAME)

O—Mn—O

IT 1304-28-5, Barium oxide, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (primary battery cathode additive)  
 RN 1304-28-5 HCAPLUS  
 CN Barium oxide (BaO) (CA INDEX NAME)

Ba—O

IC ICM H01M004-06  
 ICS H01M004-50; H01M006-16; H01M004-02; H01M004-58; H01M010-40  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST nonaq electrolyte primary battery cathode additive alk  
 earth oxide  
 IT Battery cathodes  
 (alkaline earth oxide type additives for manganese  
 dioxides in)  
 IT Primary batteries  
 (lithium; additives for cathodes and nonaq.  
 electrolytes for)  
 IT Battery electrolytes  
 (nonaq.; phosphazene derivative as additives for)  
 IT 33027-66-6 55593-38-9 593094-52-1 607744-75-2  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (additive for nonaq. electrolyte for primary batteries)  
 IT 1313-13-9, Manganese dioxide, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (alkaline earth oxide additives for nonaq. electrolyte  
 primary battery cathode active substance)  
 IT 1305-78-8, Calcium oxide, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (nonaq electrolyte primary battery cathode additive)  
 IT 1304-28-5, Barium oxide, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (primary battery cathode additive)  
 IT 1309-48-4, Magnesium oxide, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (primary battery cathode additive substance)  
 REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN  
 THE RE FORMAT

L53 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2000:363821 HCAPLUS Full-text  
 DOCUMENT NUMBER: 132:350271  
 TITLE: Cathodes for secondary lithium battery, their  
 manufacture, and their usage  
 INVENTOR(S): Hamamoto, Shunichi; Ueki, Akira; Miyoshi,  
 Kazuhiro; Yamada, Tetsuo

PATENT ASSIGNEE(S): Ube Industries, Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000149925	A	20000530	JP 1998-323322	199811 13
JP 2974213	B2	19991110	JP 1998-323322	199811 13
PRIORITY APPLN. INFO.:				

AB The title cathode consisting of cubic Li **Mn oxide** has (1) F concentration-gradient layer, in which the depth of 10% difference of F concentration between the surface and the inner is 0.5-80 nm, (2) atomic ratio of F/Mn 0.002-0.05, and (3) lattice constant  $\leq$  0.82405 nm. The Li **Mn oxide** may contain B, Mg, Al, P, Ca, Ti, V, Cr, Fe, Co, Ni, Cu, Zn, Ba, Ga, and/or Ta. The title process contains firing mixts. containing Li compds., Mn, compds., and LiF at 500-800°, and washing unreacted LiF out with water. A secondary Li battery using the cathodes is also claimed.

IT 1304-28-5, **Barium oxide**, uses

RL: **MOA (Modifier or additive use); USES (Uses)**  
 (washing unreacted LiF out by water in manufacture of F concentration-gradient layer-containing Li **Mn oxide** (containing **metal**) for secondary Li battery **cathode**)

RN 1304-28-5 HCAPLUS

CN Barium oxide (BaO) (CA INDEX NAME)

Ba—O

IC ICM H01M004-58

ICS C01G045-00; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST lithium **manganese oxide** battery cathode

IT Secondary batteries

(lithium; washing unreacted LiF out by water in manufacture of F concentration-gradient layer-containing Li **Mn oxide** (containing **metal**) for secondary Li battery cathode)

IT Battery cathodes

(washing unreacted LiF out by water in manufacture of F concentration-gradient layer-containing Li **Mn oxide** (containing **metal**) for secondary Li battery cathode)

IT 12057-17-9P, Lithium **manganese oxide** (LiMn2O4)

RL: **DEV (Device component use); IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses)**

(washing unreacted LiF out by water in manufacture of F concentration-gradient layer-containing Li **Mn oxide** (containing **metal**) for secondary Li battery cathode)

IT 1303-86-2, Boron oxide, uses 1304-28-5, **Barium**

**oxide**, uses 1309-48-4, Magnesia, uses 1313-99-1, Nickel

oxide (NiO), uses 1314-13-2, Zinc oxide, uses 1314-56-3, Phosphorus oxide (P2O5), uses 1314-61-0, Tantalum oxide 1332-37-2, Iron oxide, uses 1344-28-1, Alumina, uses 1344-70-3, Copper oxide 11099-11-9, Vanadium oxide 11104-61-3, Cobalt oxide 11118-57-3, Chromium oxide 12024-21-4, Gallium oxide 12795-06-1, Carbon oxide 13463-67-7, Titania, uses

RL: MOA (Modifier or additive use); USES (Uses)

(washing unreacted LiF out by water in manufacture of F concentration-gradient layer-containing Li Mn oxide (containing metal) for secondary Li battery cathode )

IT 7789-24-4, Lithium fluoride, uses

RL: MOA (Modifier or additive use); REM (Removal or disposal); PROC (Process); USES (Uses)

(washing unreacted LiF out by water in manufacture of F concentration-gradient layer-containing Li Mn oxide (containing metal) for secondary Li battery cathode)

L53 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1994:303360 HCAPLUS Full-text

DOCUMENT NUMBER: 120:303360

TITLE: Manganese dioxide cathode

for secondary batteries, and batteries containing this cathode

INVENTOR(S): Tomantschger, Klaus; Michalowski, Christopher

PATENT ASSIGNEE(S): Battery Technologies Inc., Can.

SOURCE: U.S., 19 pp. Cont.-in-part of U.S. 5,204,195.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5300371	A	19940405	US 1993-49405	199304 20
US 5108852	A	19920428	US 1990-497908	199003 23
US 5204195	A	19930420	US 1992-824208	199201 22
US 5336571	A	19940809	US 1993-42789	199304 06
US 5346783	A	19940913	US 1993-42786	199304 06
CN 1109641	A	19951004	CN 1994-101682	199401 31
CN 1073293	B	20011017		
CA 2157174	A1	19941027	CA 1994-2157174	199402 28
CA 2157174	C	19990316		
WO 9424718	A1	19941027	WO 1994-CA112	

W: AU, BB, BG, BR, BY, CA, CZ, FI, HU, JP, KP, KR, KZ, LK, LV, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SK, UA, UZ, VN	199402 28
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG	
AU 9461522 A 19941108 AU 1994-61522	199402 28
AU 676276 B2 19970306	199402 28
BR 9406476 A 19960123 BR 1994-6476	199402 28
EP 695465 A1 19960207 EP 1994-908227	199402 28
EP 695465 B1 20000105	199402 28
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE	
JP 08508847 T 19960917 JP 1994-522568	199402 28
JP 3494378 B2 20040209	199402 28
HU 77304 A2 19980330 HU 1995-2986	199402 28
RU 2126193 C1 19990210 RU 1995-119852	199402 28
AT 188577 T 20000115 AT 1994-908227	199402 28
ES 2145130 T3 20000701 ES 1994-908227	199402 28
FI 9504995 A 19951019 FI 1995-4995	199510 19
PRIORITY APPLN. INFO.: US 1990-497908 A3	199003 23
US 1992-824208 A2	199201 22
US 1993-49405 A	199304 20
WO 1994-CA112 W	199402 28

AB The cathode is essentially unconstrained, i.e., no cage is used in the battery to confine the cathode. During discharge of the battery, the cathode may be inclined to swell, and during the charge cycle it may be inclined to contract or decrease its dimensions. However, the cathode is dimensioned so as to substantially fill the entire space allotted for it within the battery, while allowing for a slight accommodation for vertical or longitudinal expansion or growth in bobbin cells.

The cathode may include **additives** such as C or **graphite** to increase its elec. conductivity, hydrophobic agents such as PTFE, polyethylene, or polypropylene to enhance its H permeability and recombination rates, and similar hydrophobic agents as well as hydrophilic **additives** to serve as lubricants and to decrease tool wear during the manufacturing processes. The discharge capacity of the cathode may be established at .apprx.60-120% of the theor. 1-electron discharge capacity of the **MnO<sub>2</sub>** cathode.

IT 7440-44-0

RL: USES (Uses)

(**carbon** fibers, cathodes containing metal-plated, **manganese dioxide** high-performance, for batteries)

RN 7440-44-0 HCPLUS

CN Carbon (CA INDEX NAME)

C

IT 7782-42-5

RL: USES (Uses)

(**carbon** fibers, **graphite**, cathodes containing metal-plated, **manganese dioxide** high-performance, for batteries)

RN 7782-42-5 HCPLUS

CN Graphite (CA INDEX NAME)

C

IT 1304-28-5, Barium oxide, uses

7727-43-7, Barium sulfate

7782-42-5, Graphite, uses 17194-00-2,

Barium hydroxide

RL: USES (Uses)

(**cathodes** containing, **manganese dioxide** high-performance, for batteries)

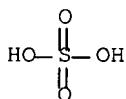
RN 1304-28-5 HCPLUS

CN Barium oxide (BaO) (CA INDEX NAME)

Ba—O

RN 7727-43-7 HCPLUS

CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)



● Ba

RN 7782-42-5 HCAPLUS  
 CN Graphite (CA INDEX NAME)

C

RN 17194-00-2 HCAPLUS  
 CN Barium hydroxide (Ba(OH)2) (9CI) (CA INDEX NAME)

HO—Ba—OH

IT 1313-13-9, Manganese dioxide, uses  
 RL: USES (Uses)  
 (cathodes, high-performance, for batteries)

RN 1313-13-9 HCAPLUS  
 CN Manganese oxide (MnO2) (CA INDEX NAME)

O—Mn—O

IC ICM H01M002-18  
 ICS H01M004-62  
 INCL 429060000  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST manganese dioxide battery cathode  
 IT Carbon fibers, uses  
 RL: USES (Uses)  
 (cathodes containing metal-plated, manganese dioxide high-performance, for batteries)  
 IT Carbon black, uses  
 RL: USES (Uses)  
 (cathodes containing, manganese dioxide high-performance, for batteries)  
 IT Batteries, secondary  
 (manganese dioxide-zinc, high-performance)  
 IT Cathodes  
 (battery, manganese dioxide, high-performance)  
 IT Metallic fibers  
 RL: USES (Uses)  
 (copper, cathodes containing metal-plated, manganese dioxide high-performance, for batteries)  
 IT Carbon fibers, uses  
 RL: USES (Uses)  
 (graphite, cathodes containing metal-plated, manganese dioxide high-performance, for batteries)  
 IT 7440-44-0  
 RL: USES (Uses)  
 (carbon fibers, cathodes containing metal-plated, manganese dioxide high-performance, for

batteries)  
 IT 7440-44-0 7782-42-5  
 RL: USES (Uses)  
 (carbon fibers, graphite, cathodes containing  
 metal-plated, manganese dioxide  
 high-performance, for batteries)  
 IT 7440-02-0, Nickel, uses  
 RL: USES (Uses)  
 (cathodes containing carbon or graphite fibers  
 plated with, manganese dioxide  
 high-performance, for batteries)  
 IT 1304-28-5, Barium oxide, uses  
 7440-06-4, Platinum, uses 7440-22-4, Silver, uses 7440-22-4D,  
 Silver, salts 7727-43-7, Barium sulfate  
 7782-42-5, Graphite, uses 9002-84-0, PTFE  
 9002-88-4, Polyethylene 9003-07-0, Polypropylene  
 17194-00-2, Barium hydroxide  
 20667-12-3, Silver oxide (Ag2O)  
 RL: USES (Uses)  
 (cathodes containing, manganese dioxide  
 high-performance, for batteries)  
 IT 1313-13-9, Manganese dioxide, uses  
 RL: USES (Uses)  
 (cathodes, high-performance, for batteries)  
 IT 7440-50-8, Copper, uses  
 RL: USES (Uses)  
 (fibers, cathodes containing metal-plated, manganese  
 dioxide high-performance, for batteries)

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L54 ANSWER 1 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:176302 HCAPLUS Full-text  
 DOCUMENT NUMBER: 145:148938  
 TITLE: Development of flat plate rechargeable alkaline  
 manganese dioxide-zinc cells  
 AUTHOR(S): Stani, Andreas; Taucher-Mautner, Waltraud;  
 Kordesch, Karl; Daniel-Ivad, Josef  
 CORPORATE SOURCE: Institute for Chemistry and Technology of  
 Inorganic Materials, Graz University of  
 Technology, Graz, A-8010, Austria  
 SOURCE: Journal of Power Sources (2006), 153(2), 405-412  
 CODEN: JPSODZ; ISSN: 0378-7753  
 PUBLISHER: Elsevier B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB This paper was focused on the development of prototypes for flat plate RAM  
 (rechargeable alkaline manganese dioxide) batteries. In contrast to cathodes used  
 in cylindrical RAM batteries, the mech. stability is a significant issue for the  
 preparation of flat-plate cathodes. Therefore, the choice of an appropriate  
 binder, e.g. Oppanol, is very important. In this work, an improved preparation  
 process of flat-plate RAM cathodes was developed by investigating the single steps  
 of the preparation method. It was further demonstrated that the most critical  
 factor of zinc electrode performance was the electrolyte content of the anode gel.  
 The best overall battery performance was achieved at 40% zinc amount and a Zn/ZnO  
 ratio of 5.0, in combination with an electrolyte content of 50.5%. In order to  
 stabilize the  $\gamma$ -structure of manganese dioxide and to enhance rechargeability, the  
 addition of barium compds. was also studied. Battery cycling has shown that flat-  
 plate RAM batteries with BaSO<sub>4</sub>-modified cathodes outperformed control batteries by

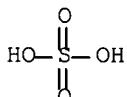
24%, mainly because of the minimized fade of discharge capacity. Moreover, the admixt. of barium manganate to the **cathode** yielded more than 15% capacity improvement after 25 cycles, compared to the **barium sulfate additive**.

IT 7727-43-7, **Barium sulfate**

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(development of flat-plate rechargeable alkaline **manganese dioxide**-zinc batteries with **cathode modified by**)

RN 7727-43-7 HCAPLUS

CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)



● Ba

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST zinc **manganese dioxide** alk battery development

IT Isobutylene rubber

RL: DEV (Device component use); USES (Uses)  
(development of flat-plate rechargeable alkaline **manganese dioxide**-zinc batteries with cathode binder of)

IT Secondary batteries

(zinc-**manganese dioxide**; development of flat-plate rechargeable alkaline **manganese dioxide**-zinc batteries)

IT 7727-43-7, **Barium sulfate** 12231-83-3,

Barium manganate [Ba<sub>3</sub>(MnO<sub>4</sub>)<sub>2</sub>] 129107-08-0, Barium manganese hydroxide oxide (Ba<sub>5</sub>Mn<sub>3</sub>(OH)<sub>12</sub>)

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(development of flat-plate rechargeable alkaline **manganese dioxide**-zinc batteries with **cathode modified by**)

IT 9003-27-4

RL: DEV (Device component use); USES (Uses)  
(isobutylene rubber; development of flat-plate rechargeable alkaline **manganese dioxide**-zinc batteries with cathode binder of)

REFERENCE COUNT:

18 THERE ARE 18 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L54 ANSWER 2 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:697981 HCAPLUS Full-text

DOCUMENT NUMBER: 131:312428

TITLE: Cathode active mass for secondary lithium batteries and its manufacture

INVENTOR(S): Sakurai, Takeshi; Sugihara, Tadashi

PATENT ASSIGNEE(S): Mitsubishi Materials Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

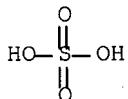
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11302018	A	19991102	JP 1998-114514	199804 24
PRIORITY APPLN. INFO.:		JP 1998-114514		199804 24

AB The cathode active mass contains 0.005-5% Ba compound and balance  $\text{Li}_{x}\text{A}_{y}\text{MnO}_2$ , where  $A = \text{H, Na, K, Mg, Ca, Sr, Ti, V, Cr, Fe, Ni, Co, and/or Al}$ ;  $0 < x < 1.5$ ;  $0 < y < 1$ , and  $2 < z < 3$ . The active mass is prepared by adding  $\text{H}_2\text{O}_2$  to a 0.01-0.8M aqueous  $\text{MnSO}_4$  solution at  $10-80^\circ$  under stirring; adding aqueous  $\text{NH}_3$  to the solution; diluting the supernatant with an equal volume of water; adding aqueous  $\text{BaCl}_2$  to the solution to precipitate  $\text{BaSO}_4$  containing  $\text{MnOOH}$ ; filtering and drying the precipitate; adding oxide, hydroxide, chloride, and/or acetate of  $A$  to the precipitate; adding  $\text{LiOH}$  to the precipitate mixture at a  $\text{Li}/\text{Mn}$  ratio = 30-60; reacting the mixture under hydrothermal conditions at  $140-300^\circ$  for 2-30 h, washing the reaction product to  $\text{pH} \leq 10$ , and drying.

IT 7727-43-7, Barium sulfate  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (compns. and manufacture of barium sulfate containing lithium manganese oxide cathode active mass for secondary lithium batteries)

RN 7727-43-7, HCAPLUS

CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)



● Ba

IC ICM C01G045-00  
 ICS H01M004-02; H01M004-04; H01M004-58; H01M010-40  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST battery cathode lithium manganese oxide  
 barium sulfate manuf  
 IT Battery cathodes  
 (compns. and manufacture of barium sulfate containing lithium manganese oxide cathode active mass for secondary lithium batteries)  
 IT 7727-43-7, Barium sulfate 207990-23-6,  
 Lithium magnesium manganese oxide  
 ( $\text{Li}_{0.9}\text{Mg}_{0.1}\text{MnO}_2$ ) 207990-26-9, Calcium lithium manganese oxide  
 ( $\text{Ca}_{0.1}\text{Li}_{0.9}\text{MnO}_2$ ) 247918-43-0, Iron lithium manganese oxide  
 ( $\text{Fe}_{0.1}\text{Li}_{1.1}\text{MnO}_2\text{.2}$ ) 247918-45-2,  
 Lithium manganese nickel oxide ( $\text{Li}_{1.1}\text{MnNiO}_{1.0}\text{O}_2\text{.2}$ ) 247918-46-3,  
 Cobalt lithium manganese oxide  
 ( $\text{Co}_{0.1}\text{Li}_{1.1}\text{MnO}_2\text{.2}$ ) 247918-47-4, Aluminum lithium manganese

**oxide** (Al0.1Li1.08MnO2.2) 247918-48-5, Chromium lithium  
**manganese oxide** (Cr0.08Li1.08MnO2.16)  
247918-49-6 247918-51-0, Lithium manganese strontium oxide  
(Li0.93MnSr0.07O2) 247918-52-1, Lithium manganese sodium oxide  
(Li0.9MnNa0.1O2) 247918-54-3, Lithium manganese potassium oxide  
(Li0.92MnK0.08O2) 247918-56-5, Lithium manganese vanadium oxide  
(Li1.08MnV0.08O2.16) 247918-57-6 247918-59-8, Lithium manganese  
hydroxide oxide (Li0.9Mn(OH)0.1O1.9) 247918-61-2, Lithium  
manganese titanium oxide (Li1.08MnTi0.08O2.16)  
RL: MOA (Modifier or additive use); USES (Uses)  
(comps. and manufacture of **barium sulfate** containing  
**lithium manganese oxide cathode**  
active mass for secondary lithium batteries)

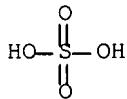
L54 ANSWER 3 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1999:557138 HCAPLUS Full-text  
DOCUMENT NUMBER: 131:172672  
TITLE: Nickel cathodes for secondary alkaline batteries  
and their manufacture  
INVENTOR(S): Hayashi, Satoshi  
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan;  
Toyota Motor Corp.  
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11238508	A	19990831	JP 1998-40708	199802 23
US 6225004	B1	20010501	US 1999-253599	199902 22
PRIORITY APPLN. INFO.:			JP 1998-40708	A 199802 23

AB The **cathodes** contain Ni(OH)2 powder and a multi-component **additive** containing Co(OH)2, where the non-Co(OH)2 components in the **additive** are encapsulate by Co(OH)2. The non-Co oxide components are selected from Co, Ni, and oxides, hydroxides, and salts of Co, Ni, Mn, Zn, Ca, Mg, Sr, Ba, Y, Yb, Er, In, Sb, and Be.  
IT 1313-13-9, **Manganese dioxide**, uses  
7727-43-7, **Barium sulfate**  
17194-00-2, **Barium hydroxide**  
RL: MOA (Modifier or additive use); PEP (Physical,  
engineering or chemical process); PROC (Process); USES (Uses)  
(comps. and manufacture of nickel hydroxide **cathodes** containing  
cobalt hydroxide encapsulated multicomponent **additives**  
for alkaline batteries)  
RN 1313-13-9 HCAPLUS  
CN Manganese oxide (MnO2) (CA INDEX NAME)

O=Mn=O

RN 7727-43-7 HCAPLUS  
 CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)



● Ba

RN 17194-00-2 HCAPLUS  
 CN Barium hydroxide (Ba(OH)2) (9CI) (CA INDEX NAME)

HO—Ba—OH

IC ICM H01M004-32  
 ICS H01M004-62  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST nickel hydroxide cathode cobalt hydroxide encapsulation  
 additive; battery nickel hydroxide cathode encapsulated  
 additive  
 IT Battery cathodes  
 (comps. and manufacture of nickel hydroxide cathodes containing cobalt  
 hydroxide encapsulated multicomponent additives for  
 alkaline batteries)  
 IT 12054-48-7, Nickel hydroxide [Ni(OH)2]  
 RL: DEV (Device component use); PEP (Physical, engineering or  
 chemical process); PROC (Process); USES (Uses)  
 (comps. and manufacture of nickel hydroxide cathodes containing cobalt  
 hydroxide encapsulated multicomponent additives for  
 alkaline batteries)  
 IT 1304-56-9, Beryllium oxide, uses 1305-62-0, Calcium hydroxide,  
 uses 1305-78-8, Calcium oxide, uses 1307-96-6, Cobalt oxide  
 (CoO), uses 1308-96-9, Europium oxide 1309-42-8, Magnesium  
 hydroxide 1309-48-4, Magnesia, uses 1309-64-4, Antimony oxide,  
 uses 1312-43-2, Indium oxide 1313-13-9,  
 Manganese dioxide, uses 1313-99-1, Nickel oxide  
 (NiO), uses 1314-13-2, Zinc oxide, uses 1314-36-9, Yttria, uses  
 1314-37-0, Ytterbium oxide 7440-02-0, Nickel, uses 7440-48-4,  
 Cobalt, uses 7487-88-9, Magnesium sulfate, uses 7727-43-7  
 , Barium sulfate 7778-18-9, Calcium sulfate  
 7789-75-5, Calcium fluoride, uses 13327-32-7, Beryllium hydroxide  
 16469-22-0, Yttrium hydroxide 17194-00-2, Barium  
 hydroxide 18480-07-4, Strontium hydroxide 20427-58-1,  
 Zinc hydroxide 21041-93-0, Cobalt hydroxide [Co(OH)2]  
 RL: MOA (Modifier or additive use); PEP (Physical,  
 engineering or chemical process); PROC (Process); USES (Uses)  
 (comps. and manufacture of nickel hydroxide cathodes containing  
 cobalt hydroxide encapsulated multicomponent additives)

for alkaline batteries)

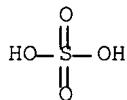
L54 ANSWER 4 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1999:35041 HCAPLUS Full-text  
 DOCUMENT NUMBER: 130:84053  
 TITLE: **Additives** for secondary alkaline  
**manganese dioxide** batteries to  
 increase cumulative discharge capacity and cycle  
 life of batteries  
 INVENTOR(S): Daniel-Ivad, Josef; Daniel-Ivad, Elfriede; Book,  
 R. James  
 PATENT ASSIGNEE(S): Battery Technologies Inc., Can.  
 SOURCE: PCT Int. Appl., 18 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9900861	A1	19990107	WO 1998-CA627	199806 26
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9880979	A	19990119	AU 1998-80979	199806 26
US 6361899	B1	20020326	US 1999-473770	199912 27
PRIORITY APPLN. INFO.:			GB 1997-13683	A 199706 27
			WO 1998-CA627	W 199806 26

AB The **additives** used in battery cathodes consist of Ba and/or Sr compds., and Ti,  
 La, Y, Ce, Zn, Ca, Sn and/or Mg compds.  
 IT 1304-28-5, Barium oxide, uses  
 7727-43-7, Barium sulfate  
 17194-00-2, Barium hydroxide  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (additives for secondary alkaline manganese  
 dioxide battery cathodes)  
 RN 1304-28-5 HCAPLUS  
 CN Barium oxide (BaO) (CA INDEX NAME)

Ba—O

RN 7727-43-7 HCAPLUS  
 CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)



● Ba

RN 17194-00-2 HCAPLUS  
 CN Barium hydroxide ( $\text{Ba}(\text{OH})_2$ ) (9CI) (CA INDEX NAME)

HO—Ba—OH

IC ICM H01M004-50  
 ICS H01M010-24  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST manganese dioxide battery cathode  
 additive; barium compd additive manganese dioxide cathode; strontium compd additive manganese dioxide cathode; titanium compd additive manganese dioxide cathode; lanthanum compd additive manganese dioxide cathode; yttrium compd additive manganese dioxide cathode; cerium compd additive manganese dioxide cathode; zinc compd additive manganese dioxide cathode; calcium compd additive manganese dioxide cathode; tin compd additive manganese dioxide cathode; magnesium compd additive manganese dioxide cathode  
 IT Battery cathodes  
 (additives for secondary alkaline manganese dioxide)  
 IT 1304-28-5, Barium oxide, uses  
 1305-78-8, Calcia, uses 1306-38-3, Cerium oxide ( $\text{CeO}_2$ ), uses  
 1309-48-4, Magnesia, uses 1312-81-8, Lanthanum oxide ( $\text{La}_2\text{O}_3$ )  
 1314-13-2, Zinc oxide, uses 7440-24-6D, Strontium, compds., uses  
 7440-65-5D, Yttrium, compds., uses 7727-43-7,  
 Barium sulfate 7787-35-1, Barium manganese oxide ( $\text{BaMnO}_4$ ) 13463-67-7, Titania,  
 uses 17194-00-2, Barium hydroxide  
 18282-10-5, Tin dioxide  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (additives for secondary alkaline manganese dioxide battery cathodes)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN

## THE RE FORMAT

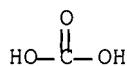
L54 ANSWER 5 OF 12 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1997:467571 HCPLUS Full-text  
 DOCUMENT NUMBER: 127:83883  
 TITLE: Nonaqueous electrolyte batteries with lithium  
 containing **manganese oxide**  
 cathodes  
 INVENTOR(S): Uehara, Mayumi; Yamazaki, Mikiya; Yanai,  
 Atsushi; Noma, Toshiyuki; Nishio, Koji  
 PATENT ASSIGNEE(S): Sanyo Electric Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09139211	A	19970527	JP 1995-296818	199511 15
PRIORITY APPLN. INFO.:			JP 1995-296818	199511 15

AB The batteries use cathodes composed of heat treated Li compound and **additive** containing **MnO<sub>2</sub>**, where the Li compound is selected from LiOH, Li<sub>2</sub>CO<sub>3</sub>, and LiNO<sub>3</sub> and is added at a Li/Mn mol ratio (1-30):(70-99); the **additive** is  $\geq 1$  of hydroxides, carbonates, and nitrates of element M selected Na, K, Rb, Cs, Fr, Be, Mg, Ca, Sr, Ba, Ra, Fe, Al, B, Si, P, Ga, Ge, As, Se, In, Sn, Sb, Te, Pb, Po, and At at a M/Li mol ratio (10-40):(60-90). The heat treatment is carried out at 270-380°. These batteries have high capacity.  
 IT 1313-13-9, **Manganese dioxide**, uses  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
 (lithium compound and **additive** containing heat treated  
**manganese dioxide** for cathodes in lithium  
 batteries)  
 RN 1313-13-9 HCPLUS  
 CN Manganese oxide (MnO<sub>2</sub>) (CA INDEX NAME)

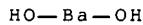
O=Mn=O

IT 513-77-9, Barium carbonate  
 17194-00-2, Barium hydroxide  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (lithium compound and **additive** containing heat treated  
**manganese dioxide** for cathodes in  
 lithium batteries)  
 RN 513-77-9 HCPLUS  
 CN Carbonic acid, barium salt (1:1) (CA INDEX NAME)



● Ba

RN 17194-00-2 HCAPLUS  
 CN Barium hydroxide (Ba(OH)2) (9CI) (CA INDEX NAME)



IC ICM H01M004-58  
 ICS H01M004-06; H01M004-08; H01M006-16  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST battery cathode lithium **manganese oxide**  
**additive**; heat treatment lithium **manganese oxide** cathode  
 IT Battery cathodes  
     (lithium compound and **additive** containing heat treated  
     **manganese dioxide** for cathodes in lithium  
     batteries)  
 IT 1313-13-9, **Manganese dioxide**, uses  
     RL: DEV (Device component use); PEP (Physical, engineering or  
     chemical process); PROC (Process); USES (Uses)  
     (lithium compound and **additive** containing heat treated  
     **manganese dioxide** for cathodes in lithium  
     batteries)  
 IT 463-79-6D, Carbonic acid, arsensic salt, uses 463-79-6D, Carbonic  
     acid, astatine salt, uses 463-79-6D, Carbonic acid, boron salts,  
     uses 463-79-6D, Carbonic acid, phosphorus salt, uses 463-79-6D,  
     Carbonic acid, polonium salt, uses 463-79-6D, Carbonic acid,  
     selenium salt, uses 463-79-6D, Carbonic acid, silicon salt, uses  
     463-79-6D, Carbonic acid, tellurium salt, uses 471-34-1, Calcium  
     carbonate, uses 497-19-8, Sodium carbonate, uses 513-77-9  
     , **Barium carbonate** 534-17-8, Cesium carbonate  
     546-93-0, Magnesium carbonate 554-13-2, Lithium carbonate  
     584-08-7, Potassium carbonate 584-09-8, Rubidium carbonate  
     598-63-0, Lead carbonate 1305-62-0, Calcium hydroxide, uses  
     1309-42-8, Magnesium hydroxide 1310-58-3, Potassium hydroxide,  
     uses 1310-65-2, Lithium hydroxide 1310-73-2, Sodium hydroxide,  
     uses 1310-82-3, Rubidium hydroxide 1343-98-2, Silicon hydroxide  
     1633-05-2, Strontium carbonate 7116-98-5, Radium carbonate  
     7631-99-4, Sodium nitrate, usès 7697-37-2D, Nitric acid, astatine  
     salt, uses 7697-37-2D, Nitric acid, boron salt, uses 7697-37-2D,  
     Nitric acid, germanium salt, uses 7697-37-2D, Nitric acid,  
     phosphorus salt, uses 7697-37-2D, Nitric acid, selenium salt, uses  
     7697-37-2D, Nitric acid, silicon salt, uses 7757-79-1, Potassium  
     nitrate, uses 7789-18-6, Cesium nitrate 7790-69-4, Lithium  
     nitrate 10022-31-8, Barium nitrate 10042-76-9, Strontium nitrate  
     10043-35-3, Boric acid (H3BO3), uses 10099-74-8, Lead nitrate  
     10124-37-5, Calcium nitrate 10213-12-4, Radium nitrate [Ra(NO3)2]  
     10290-71-8, Iron carbonate 10377-60-3, Magnesium nitrate  
     11113-66-9, Iron hydroxide 12023-95-9, Francium hydroxide  
     12023-99-3, Gallium hydroxide 12027-17-7, Polonium hydroxide

[Po(OH)4] 13106-47-3, Beryllium carbonate 13126-12-0, Rubidium nitrate 13327-32-7, Beryllium hydroxide 13464-58-9, Arsenous acid 13473-90-0, Aluminum nitrate 13494-90-1, Gallium nitrate 13597-99-4, Beryllium nitrate 13598-36-2, Phosphonic acid 13770-61-1, Indium nitrate 14104-77-9, Iron nitrate 14455-29-9, Aluminum carbonate 15021-18-8, Germanium hydroxide [Ge(OH)4] 17194-00-2, **Barium hydroxide** 18480-07-4, Strontium hydroxide 19783-14-3, Lead hydroxide 20328-96-5, Antimony nitrate 20661-21-6, Indium hydroxide 21351-79-1, Cesium hydroxide 21645-51-2, Aluminum hydroxide, uses 39311-68-7, Tin hydroxide 41480-79-9, Tin nitrate 53216-05-0 60300-69-8, Selenium hydroxide [Se(OH)2] 60459-04-3, Indium carbonate 62362-19-0, Tellurium hydroxide 64535-94-0, Tellurium nitrate 85184-26-5, Francium nitrate 90031-84-8, Francium carbonate 91094-39-2, Arsenic nitrate 95925-37-4, Antimony carbonate [Sb2(CO3)3] 98966-86-0, Radium hydroxide [Ra(OH)2] 126331-89-3, Hypoastatous acid 127795-35-1 142712-19-4, Carbonic acid, gallium salt 150815-34-2, Carbonic acid, tin salt 152761-81-4, Antimony hydroxide  
 RL: **MOA (Modifier or additive use); USES (Uses)**  
 (lithium compound and **additive** containing heat treated **manganese dioxide** for **cathodes** in lithium batteries)

L54 ANSWER 6 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1995:795672 HCAPLUS Full-text

DOCUMENT NUMBER: 123:175031

TITLE: Secondary batteries with spinel-structured lithium **manganese oxide** cathodes

INVENTOR(S): Nagaura, Tooru

PATENT ASSIGNEE(S): Haibaru Jugen, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07169457	A	19950704	JP 1993-353059	199312 17
PRIORITY APPLN. INFO.:			JP 1993-353059	199312 17

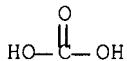
AB The cathode active materials contain  $\geq 1$  alkaline earth carbonates. The batteries show long life cycles.

IT 513-77-9, **Barium carbonate**

RL: **MOA (Modifier or additive use); USES (Uses)**  
 (alkaline earth carbonate **additives** for lithium **manganese oxide cathodes** for batteries)

RN 513-77-9 HCAPLUS

CN Carbonic acid, barium salt (1:1) (CA INDEX NAME)



● Ba

IC ICM H01M004-02  
 ICS H01M004-58; H01M010-40  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST lithium **manganese oxide** battery cathode; alk  
 earth carbonate battery cathode  
 IT Alkaline earth compounds  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (carbonates; alkaline earth carbonate **additives** for lithium  
**manganese oxide** cathodes for batteries)  
 IT Cathodes  
 (battery, alkaline earth carbonate **additives** for lithium  
**manganese oxide** cathodes for batteries)  
 IT 513-77-9, Barium carbonate 546-93-0,  
 Magnesium carbonate  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (alkaline earth carbonate **additives** for lithium  
**manganese oxide** cathodes for  
 batteries)  
 IT 12057-17-9, Lithium **manganese oxide** (limn<sub>2</sub>O<sub>4</sub>)  
 RL: DEV (Device component use); USES (Uses)  
 (spinel-structured; alkaline earth carbonate **additives** for  
 lithium **manganese oxide** cathodes for  
 batteries)

L54 ANSWER 7 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1995:773214 HCAPLUS Full-text  
 DOCUMENT NUMBER: 123:174998  
 TITLE: Cathodes for secondary batteries  
 INVENTOR(S): Nagaura, Tooru  
 PATENT ASSIGNEE(S): Haibaru Jugen, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07153496	A	19950616	JP 1993-340305	199311 26
JP 3368029	B2	20030120	JP 1993-340305	199311 26

PRIORITY APPLN. INFO.:

AB The **cathodes** comprise Li-containing mixed oxides (e.g., LiMn<sub>2</sub>O<sub>4</sub>) containing **BaO**, **MgO**, and/or **CaO**. The batteries have high capacity and long life.  
 IT 1304-28-5, Barium oxide, uses  
 RL: MOA (Modifier or additive use); USES (Uses)

(battery **cathodes** of lithium mixed oxides containing)  
 RN 1304-28-5 HCAPLUS  
 CN Barium oxide (BaO) (CA INDEX NAME)

Ba—O

IC ICM H01M010-40  
 ICS H01M004-02  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST battery cathode lithium **manganese oxide**; barium  
 lithium oxide cathode battery; magnesia lithium oxide cathode  
 battery; calcia lithium oxide cathode battery  
 IT **Cathodes**  
 (battery, lithium mixed oxides containing **barium oxide** and/or magnesium oxide and/or calcium oxide)  
 IT 1304-28-5, **Barium oxide**, uses  
 1305-78-8, **Calcia**, uses 1309-48-4, **Magnesia**, uses  
 RL: **MOA (Modifier or additive use)**; **USES (Uses)**  
 (battery **cathodes** of lithium mixed oxides containing)  
 IT 12057-17-9, **Lithium manganese oxide** (LiMn2O4)  
 RL: **DEV (Device component use)**; **USES (Uses)**  
 (oxides-containing battery cathodes)

L54 ANSWER 8 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1995:687254 HCAPLUS Full-text  
 DOCUMENT NUMBER: 123:149003  
 TITLE: Slurries for manufacture of oxygen cathode  
 material for solid-electrolyte fuel cells  
 INVENTOR(S): OKuyama, Ryoichi; Nomura, Eiichi  
 PATENT ASSIGNEE(S): Yuasa Battery Co Ltd, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07114926	A	19950502	JP 1993-286084	199310 19
JP 3417495	B2	20030616	JP 1993-286084	199310 19

PRIORITY APPLN. INFO.: JP 1993-286084

AB The slurries are composed of multiple oxides of rare earth metals and alkaline earth metals and contain **additives** which react with the rare earth metal ions and the alkaline earth metal ions to form insol. **salts**. Preferably, the **additives** are ammonium oxalate or ammonium carbonate, and the multiple oxides is  $(La_{1-x}Ax)_yMnO_3$  ( $A = Ca, Sr, Ba; x = 0-0.9; y = 0.85-1$ ), or  $(La_{1-x}Ax)_yCrO_3$ . The slurries have good moldability and **cathodes** prepared from the slurries have high strength.  
 IC ICM H01M004-88  
 ICS H01M004-86  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT 139737-59-0, Lanthanum manganese strontium oxide (La0.72MnSr0.18O3)  
 167211-17-8, Calcium lanthanum **manganese oxide**  
 (Ca0-0.9La0.08-1MnO3) 167211-18-9, Lanthanum manganese strontium  
 oxide (La0.08-1MnSr0-0.903) 167211-19-0, Barium lanthanum  
**manganese oxide** (Ba0-0.9La0.08-1MnO3)  
 167211-20-3, Calcium chromium lanthanum oxide (Ca0-0.9CrLa0.08-1O3)  
 167211-21-4, Chromium lanthanum strontium oxide (CrLa0.08-1Sr0-  
 0.903) 167211-22-5, Barium chromium lanthanum oxide  
 (Ba0-0.9CrLa0.08-1O3) 167211-23-6 167211-35-0  
 RL: DEV (Device component use); PEP (Physical, engineering or  
 chemical process); PROC (Process); USES (Uses)  
 (slurries for manufacture of oxygen cathode material for  
 solid-electrolyte fuel cells)

L54 ANSWER 9 OF 12 HCPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1995:357571 HCPLUS Full-text  
 DOCUMENT NUMBER: 122:138079  
 TITLE: Development of a nickel/metal hydride battery  
 (Ni/MH) system for EV application  
 AUTHOR(S): Ikoma, Munehisa; Hamada, Shinji; Morishita,  
 Nobuyasu; Hoshina, Yasuko; Matsuda, Hiromu;  
 Ohta, Kazuhiro; Kimura, Tadao  
 CORPORATE SOURCE: EV Battery Development Cent., Matsushita Battery  
 Ind. Co., Ltd., Osaka, 570, Japan  
 SOURCE: Proceedings - Electrochemical Society (1994),  
 94-27(Hydrogen and Metal Hydride Batteries),  
 370-80  
 CODEN: PESODO; ISSN: 0161-6374  
 PUBLISHER: Electrochemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB In order to satisfy basic battery characteristics for elec. vehicles (EV) such as specific energy, specific power and cycle life that are required for driving on urban streets, we have selected valve-regulated lead acid battery as a conventional battery and nickel/metal-hydride battery as an advanced battery, and have been studying on these development in order to put into practical use by 1998. Regarding to nickel/metal-hydride battery, excellent nickel pos. electrode with high temperature charge efficiency accomplished with **additive**, such as Ca compound, and exceedingly good hydrogen absorbing alloy neg. electrode with high capacity and long cycle life, achieved by adjustment of alloy composition, surface treatment, and control of binder and conductive **additive** have been developed to overcome difficulties in scale up of battery size. Module battery using these technologies possessed specific energy twice (70 Wh/kg) as lead acid battery, and has superior specific power (160 Wh/kg) and long cycle life.

IT 1304-28-5, Barium oxide, uses  
 1313-13-9, Manganese dioxide, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (cathode additive; development of a  
 nickel/metal hydride battery system for elec. vehicle  
 application)

RN 1304-28-5 HCPLUS  
 CN Barium oxide (BaO) (CA INDEX NAME)

Ba—O

RN 1313-13-9 HCPLUS  
 CN Manganese oxide (MnO2) (CA INDEX NAME)

O=Mn=O

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 56

IT 1304-28-5, **Barium oxide**, uses

1305-62-0, Calcium hydroxide, uses 1306-19-0, Cadmium oxide, uses  
 1308-38-9, Chromic oxide, uses 1309-37-1, Ferric oxide, uses  
 1309-42-8, Magnesium hydroxide 1309-64-4, Antimony trioxide, uses  
 1312-43-2, Indium oxide in<sub>2</sub>O<sub>3</sub> 1312-81-8, Lanthanum oxide La<sub>2</sub>O<sub>3</sub>  
 1313-13-9, **Manganese dioxide**, uses  
 1314-13-2, Zinc oxide, uses 1314-36-9, Yttria, uses 1314-62-1,  
 Vanadium pentoxide, uses 1317-39-1, Cuprous oxide, uses  
 7789-75-5, Calcium fluoride, uses 13463-67-7, Titania, uses  
 18282-10-5, Tin dioxide 18480-07-4, Strontium hydroxide  
 20548-54-3, Calcium sulfide 20667-12-3, Silver oxide Ag<sub>2</sub>O

RL: **MOA (Modifier or additive use); USES (Uses)**

(cathode additive; development of a  
 nickel/metal hydride battery system for elec. vehicle  
 application)

L54 ANSWER 10 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1993:564048 HCAPLUS Full-text

DOCUMENT NUMBER: 119:164048

TITLE: Cathodes for primary or secondary dioxide  
 batteries with barium compound **additive**

INVENTOR(S): Taucher, Waltraud; Kordesch, Karl; Daniel-Ivad,  
 Josef

PATENT ASSIGNEE(S): Battery Technologies Inc., Can.

SOURCE: PCT Int. Appl., 25 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 9312551	A1	19930624	WO 1992-CA553	199212 21
W: AU, BB, BG, BR, CA, CS, FI, JP, KP, KR, LK, MG, MN, MW, NO, PL, RO, RU, SD				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, SN, TD, TG				
HU 67934	A2	19950529	HU 1991-4047	199112 19
HU 215866	B	19990329		
CA 2126069	A1	19930624	CA 1992-2126069	199212 21
CA 2126069	C	20060606		
AU 9331545	A	19930719	AU 1993-31545	199212 21

AU 673338	B2	19961107		
EP 617845	A1	19941005	EP 1993-900059	
				199212
				21
EP 617845	B1	19960207		
R: BE, CH, DE, ES, FR, GB, IT, LI				
JP 07502145	T	19950302	JP 1992-510483	
				199212
				21
ES 2085761	T3	19960601	ES 1993-900059	
				199212
RU 2096867	C1	19971120	RU 1994-30500	
				199212
PRIORITY APPLN. INFO.:			HU 1991-4047	A
				199112
				19
			WO 1992-CA553	W
				199212
				21

AB The **cathodes** comprise **MnO<sub>2</sub>**, a conductive powder, and .apprx. 3-25 weight% **additive** selected from **Ba(OH)<sub>2</sub>**, **BaO**, and **BaSO<sub>4</sub>**. **Ba(OH)<sub>2</sub>** may include 8 mols. of **H<sub>2</sub>O** of crystallization. The **cathode** components are uniformly mixed and pressed to form a porous body filled with the electrolyte.

IT 1304-28-5, **Barium oxide**, uses

7727-43-7, **Barium sulfate**

17194-00-2, **Barium hydroxide**

RL: USES (Uses)

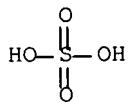
(**cathodes** containing, **manganese dioxide**, for high-capacity batteries)

RN 1304-28-5 HCAPLUS

CN Barium oxide (BaO) (CA INDEX NAME)

Ba—O

RN 7727-43-7 HCAPLUS  
 CN Sulfuric acid, barium salt (1:1) (CA INDEX NAME)



● Ba

RN 17194-00-2 HCAPLUS  
 CN Barium hydroxide (Ba(OH)<sub>2</sub>) (9CI) (CA INDEX NAME)

HO—Ba—OH

IT 1313-13-9, **Manganese dioxide**, uses  
 RL: USES (Uses)  
 (cathodes, containing barium compound **additive**, for  
 high-capacity batteries)  
 RN 1313-13-9 HCAPLUS  
 CN Manganese oxide (MnO<sub>2</sub>) (CA INDEX NAME)

O—Mn—O

IC ICM H01M004-50  
 ICS H01M004-62; H01M006-04  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST battery **manganese dioxide cathode**  
**additive**; **barium hydroxide**  
**manganese dioxide cathode**;  
**barium oxide manganese dioxide**  
**cathode**; **barium sulfate**  
**manganese dioxide cathode**  
 IT Cathodes  
 (battery, **manganese dioxide**, containing barium  
 compound **additive**)  
 IT 1304-28-5, **Barium oxide**, uses  
 7727-43-7, **Barium sulfate**  
 17194-00-2, **Barium hydroxide**  
 RL: USES (Uses)  
 (cathodes containing, **manganese dioxide**  
 , for high-capacity batteries)  
 IT 1313-13-9, **Manganese dioxide**, uses  
 RL: USES (Uses)  
 (cathodes, containing barium compound **additive**, for  
 high-capacity batteries)

L54 ANSWER 11 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1982:549540 HCAPLUS Full-text  
 DOCUMENT NUMBER: 97:149540  
 TITLE: Phosphorus pentoxide-vanadium pentoxide-lead  
 monoxide glass which reduces arcing in the  
 funnel portion of a CRT  
 INVENTOR(S): Weaver, Edward A.  
 PATENT ASSIGNEE(S): Owens-Illinois, Inc. , USA  
 SOURCE: U.S., 6 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 4342943	A	19820803	US 1979-85822	197910
				17

PRIORITY APPLN. INFO.:

US 1979-85822

197910

17

AB Elec. resistant glass film coatings on the neck or funnel part of **cathode** ray tubes (CRT) which decrease arcing are described. The glass film, containing V2O5 50-75, P2O5 15-40, ZnO and/or PbO 5-20 weight% and 0-15 weight% **additives** of BaO, Sb2O3, Li2O, **Mn oxide**, SiO2, B2O3, and MoO3 has softening pt.  $\leq 475^\circ$ , elec. resistance 0.1-100  $\text{M}\Omega/\text{square}$ , and flow ratio 3 and is substantially water-soluble. Thus, a glass fiber film composition containing V2O5 73, ZnO 5, P2O5 19, SiO2 1, and B2O3 2 weight% has elec. resistance 10.0  $\text{M}\Omega/\text{square}$  and is vitreous.

IT 1304-28-5, uses and miscellaneous

RL: USES (Uses)  
(glass films, vanadium phosphate, on **cathode** ray tubes, for arcing inhibition)

RN 1304-28-5 HCAPLUS

CN Barium oxide (BaO) (CA INDEX NAME)

Ba—O

IC C03C003-10; H01J031-00; C03C003-16; H01B001-08

INCL 313479000

CC 57-1 (Ceramics)  
Section cross-reference(s): 76

IT 1304-28-5, uses and miscellaneous 1309-64-4, uses and miscellaneous 1313-27-5, uses and miscellaneous 1314-13-2, uses and miscellaneous 1317-36-8, uses and miscellaneous 11129-60-5 12057-24-8, uses and miscellaneous

RL: USES (Uses)  
(glass films, vanadium phosphate, on **cathode** ray tubes, for arcing inhibition)

L54 ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1970:501680 HCAPLUS Full-text  
DOCUMENT NUMBER: 73:101680  
TITLE: Silicate glass for tube screen plates of cathode-ray tubes  
INVENTOR(S): Sheldon, John L.  
PATENT ASSIGNEE(S): Corning Glass Works  
SOURCE: Ger., 5 pp.  
CODEN: GWXXAW  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 1464518		19700723	DE	
PRIORITY APPLN. INFO.:			US	196209
				10
			US	196306

AB Brownish discoloration of **cathode** ray tube screen plates which occurs during use may be avoided without using costly **additives**, such as CeO<sub>2</sub>, by addition of 0.01-0.2 weight % of MnO in conjunction with up to 0.5 weight % TiO<sub>2</sub>. The amount of TiO<sub>2</sub> is never >3 times the weight of MnO and is adjusted so that the 4050 Å: 5460 Å wavelength relationship lies between 1:1 and 4:1. The glass has the formulation: SiO<sub>2</sub> 66, Al<sub>2</sub>O<sub>3</sub> 4, BaO 12, PbO 2.5, K<sub>2</sub>O 6, Na<sub>2</sub>O 7, Li<sub>2</sub>O 0.5, Rb<sub>2</sub>O 0.4, F 1, and Sb<sub>2</sub>O<sub>3</sub> and As<sub>2</sub>O<sub>3</sub> 0.6%. Tables compare the results obtained (a) with varying amts. of MnO, (b) with varying amts. of MnO + TiO<sub>2</sub>, (c) varying amts. of CeO<sub>2</sub> against controls of unmodified silica glass.

IC H01J

CC 57 (Ceramics)

IT Cathode-ray tubes  
(glass for, containing **manganese oxide** and  
titanium oxide)

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